

upon the professional capabilities of the museum workers concerned, and thus tend indirectly to discredit the profession as a whole.

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19. DURATION OF SONG IN SOME COMMON BIRDS

(With five graphs)

During April, 1950, I was at Daltonganj, the headquarters of the District of Palamau in Bihar. The residence I was occupying had several young mango trees in its compound, but on the north a large orchard adjoined. This orchard was in a sadly neglected condition, but from my point of view was ideal. Apart from the fruit trees i.e. mango and guava, this orchard had several other species, mainly *Butea frondosa*, *Broussonetia flabellifera*, *Cassia fistula*, *Poinciana regia*, *Bombax malabaricum*, *Azadirachta indica*, and *Tamarindus indicus*. There was a dense undergrowth of lantana and coarse spear grass (*Imperata arudinacea?*). Twenty-seven species of birds were seen by me in this area during a stay of approximately $4\frac{1}{2}$ months, out of which eight species had started nesting by the middle of April when I left. The territories of the Crimson-breasted Barbet [*Megalaima haemacephala* (Muller)] and the Magpie-Robin (*Copsychus saularis* Linn.) were very well defined and comparatively narrow, and were incorporated by me in a single field sketch. While studying the territories of these birds, I was struck by the remarkable periodicity their songs seemed to have, and I decided to time them over a number of days to check up this impression. Observations started at 5 a.m. and were continued till after sunset over a period of 10 days. Neither of these species commenced calling before 5 a.m. and so this hour was selected as a convenient starting point for the observations. No observations could be made after dark. By confining my observations to the territories of these birds I ensured that the singing time of the same individual was noted over the entire period. At the same time I made observations on the Papiha or Brain-fever Bird (*Hierococcyx varius* Vahl.), and the Koel (*Eudynamis scolopaceus* Linn.) as well. But as these birds have apparently no fixed territories I am unable to guarantee that the same individual was concerned throughout the period. All the same it must be noted that only a single pair of each species had been observed in the area over a long period of time, so it would not be unreasonable to presume that the individual birds observed during the entire period of 10 days were the same. Observations on the Yellow-cheeked Tit (*Machlolophus xanthogenys* Vigors) made at Ranchi in the first week of May 1950, were confined to the territory of the nesting bird.

The duration of each burst of song was timed with a Rolex Oyster wrist watch fitted with a centre second hand and noted against the hour at which the song was heard. On the completion of the observations, the total duration of song over each clock-hour was averaged and plotted against the middle of that clock-hour. It will therefore be noticed that all the curves began from 5.30 a.m., but

the inference should not be drawn that all these birds started calling precisely at that time. This time is just the middle of the clock-hour from 5 a.m. to 6 a.m. and the time against it expresses the total duration of the call during this particular clock-hour. The same remark applies to all the points of the curve. The results may be summed up as under:—

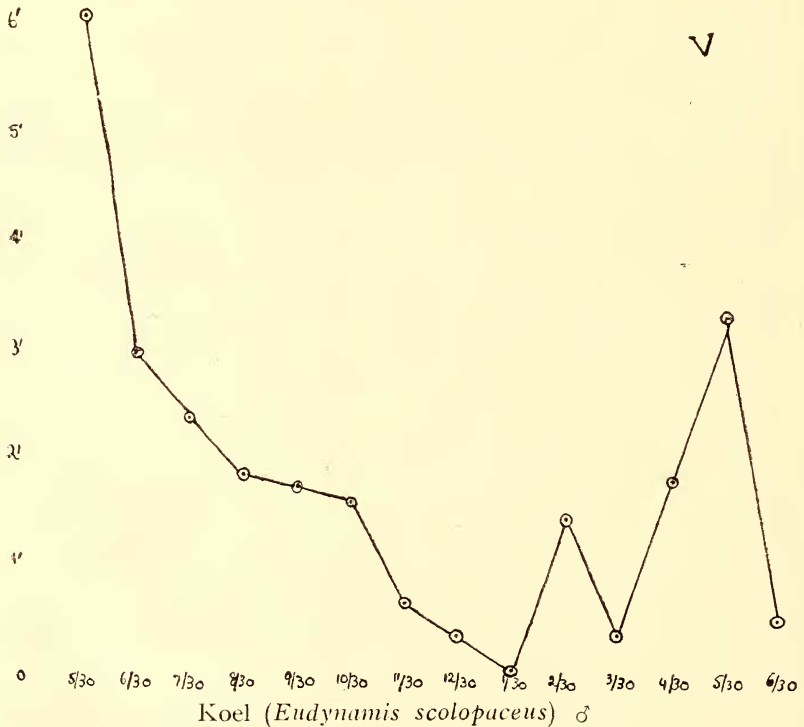
Magpie Robin, Male.—A peak early in the morning, followed by a very steep descent to the middle of the day. A minor peak again late in the afternoon.

Crimson-breasted Barbet.—A peak in the early morning followed by a minimum between 7 and 8 a.m. Then follow peaks of increasing amplitude culminating in another maximum late in the afternoon.

Yellow-cheeked Tit.—Two pronounced maxima early morning and late afternoon, with a subsidiary peak late in the morning.

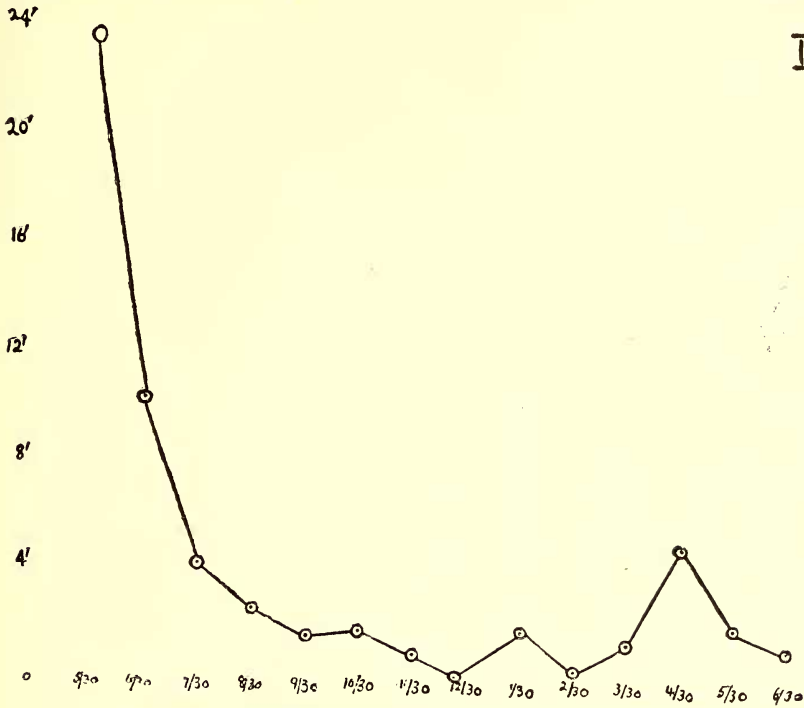
Brain-fever Bird (Papiha).—A maximum between 6 and 7 a.m. followed by peaks of decreasing amplitude, culminating in another maximum in the evening.

Koel.—A very pronounced maximum early in the morning followed by a steep fall; a subsidiary peak early in the afternoon, culminating in another maximum in the evening.



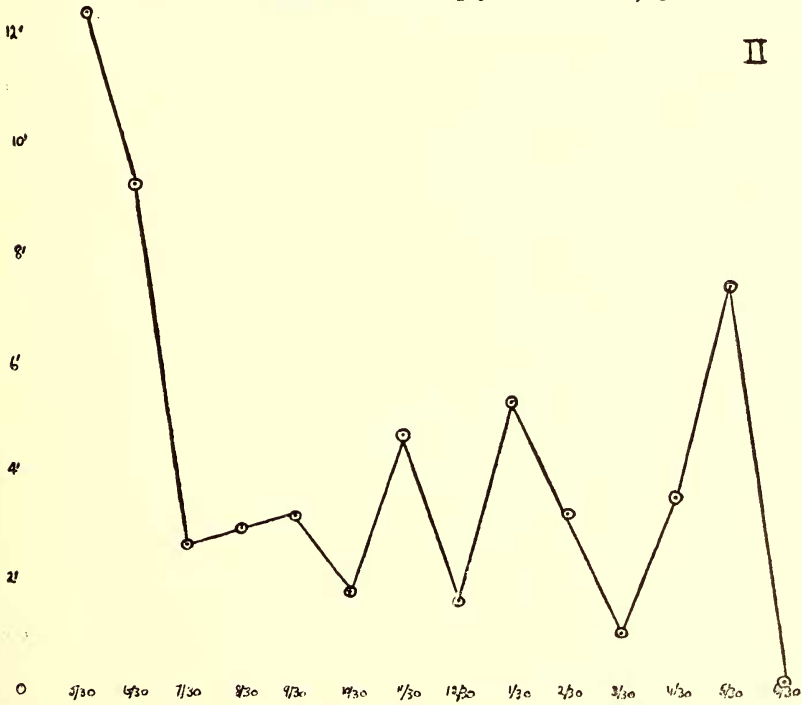
The weather throughout was warm with one or two cloudy days. Dust storms were fairly common throughout the interval, generally in the afternoon. Average time of sunrise was 5.50 a.m. and sun-

I



Dyalh or Magpie-Robin (*Copsychus saularis*) ♂

II



Crimson-breasted Barbet (*Megalaima haemacephala*)